Attention Installer

Buderus GB142 Models are now being supplied with an AM10 Outdoor Reset Module

(see enclosed instructions for installation & set-up)

Please disregard all installation and application instructions for the RC10 room control, which is *no longer supplied* with this product. The RC10 room control will continue to be available as an optional component.

Application drawings in this manual are ***conceptual only*** and do not purport to address all design, installation or safety considerations. Additional safety and/or auxiliary equipment may be required. These diagrams are for reference use by officials, designers and licensed installers. It is expected that installers have adequate knowledge of national and local codes, as well as accepted industry practices, and are trained on equipment, procedures, and applications involved. **Drawings are not to scale.**

Refer to the GB142 Applications Manual for additional information.

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AM10 description of module

Product description

The AM10 is a modulating control for Buderus GB142 boilers equipped with the EMS bus. The supply water temperature is set based on outdoor temperature. The boiler runs and modulates based on information received from the AM10, AND the temperature delta T between supply and return.

A voltage free (dry contact) ON/OFF signal from a third party room thermostat or zone controller (not included) is used to communicate a heat demand.

The AM10 offers warm weather shutdown (WWSD) when the outdoor temperature rises above a custom adjustable temperature (default: 70°F).

To control and stage two boilers, combine the AM10 with a CM10 module (see page 15).

Outdoor reset

Outdoor reset is a way to economically control space heating based on the outdoor temperature. It functions based on the fact that the colder the weather the greater the heat loss of a structure, and the higher the supply water temperature needed to heat the house. On a warmer day with smaller heat loss a lower water temperature will be able to heat the house.

Outdoor reset is the preferred control when using multiple zones, as the boiler supply water temperature is not dictated by a master or largest zone, but solely based on the heat loss of the structure.

Mounting of the AM10

The AM10 module should be mounted inside a GB142 boiler above the controls.

Heating curve

The AM10 has a built in linear heating curve that sets the supply water temperature in relation to the outdoor temperature.

Reference temperature (top of curve) represents the water temperature at **14°F** outdoors:

	Outdoor Temperature design day	Supply Temperature
Default	**14°F**	**167°F**
Example 1	**20°F**	**150°F**
Example 2	**-10°F**	**175°F**
Example 3	**-20°F**	**185°F**

Based on type of heating system and system design temperature, the following water temperatures are recommended for bottom of heating curve **(68°F)**:

	Outdoor Temperature	Supply Temperature
Default (Radiant Floor)	**68°F**	**86°F**
Panel Radiators	**68°F**	**100°F**
Baseboard	**68°F**	**115°F**
Hydro Air	**68°F**	**140°F**

The maximum supply water temperature set on the boiler dial works as a high limit. The boiler will follow the heating curve in the AM10 up to the high limit.

WWSD

Warm weather shut down (WWSD) temperature is factory set for 70°F. If the outdoor temperature rises above the setting, the boiler will be turned off. The value can be adjusted between 32 and 86°F.

Positioning of the outdoor sensor

For best performance, the outdoor sensor should be positioned where the sun can never reach it. Mount on a North facing wall of the building out of the sunlight, with at least 1 foot above snow line. Keep the sensor away from heat sources like dryer, water heater, or boiler vents, windows, etc.

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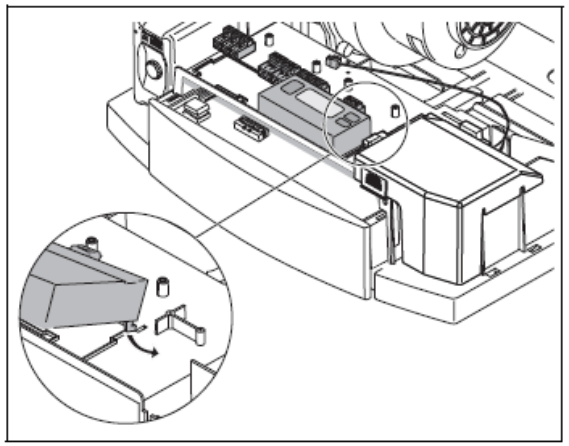
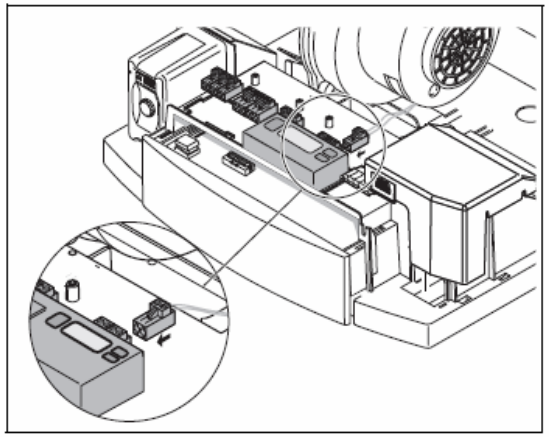
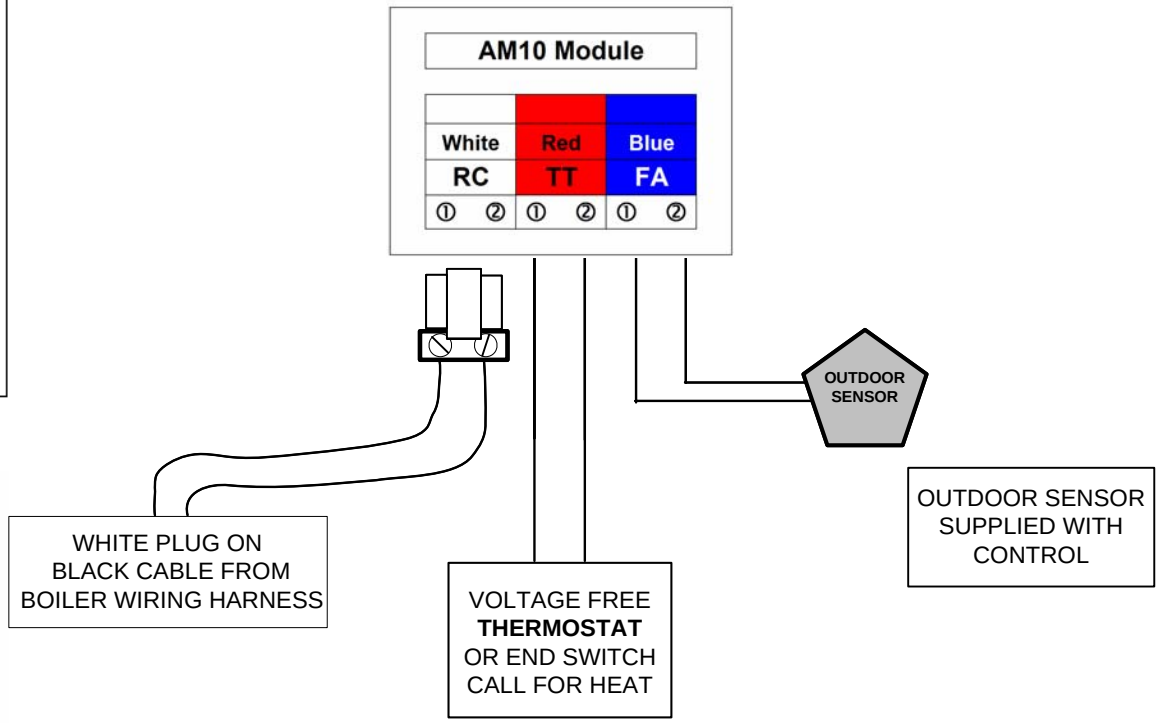
AM10 installation and basic wiring

The AM10 module mounts inside the GB142, above the controls. After you install the module, plug in the white connector that is part of the black boiler wiring harness (this plug is located behind the tray), then connect the thermostat and sensor.







See AM10 manual (included with control)
for detailed installation & programming instructions.

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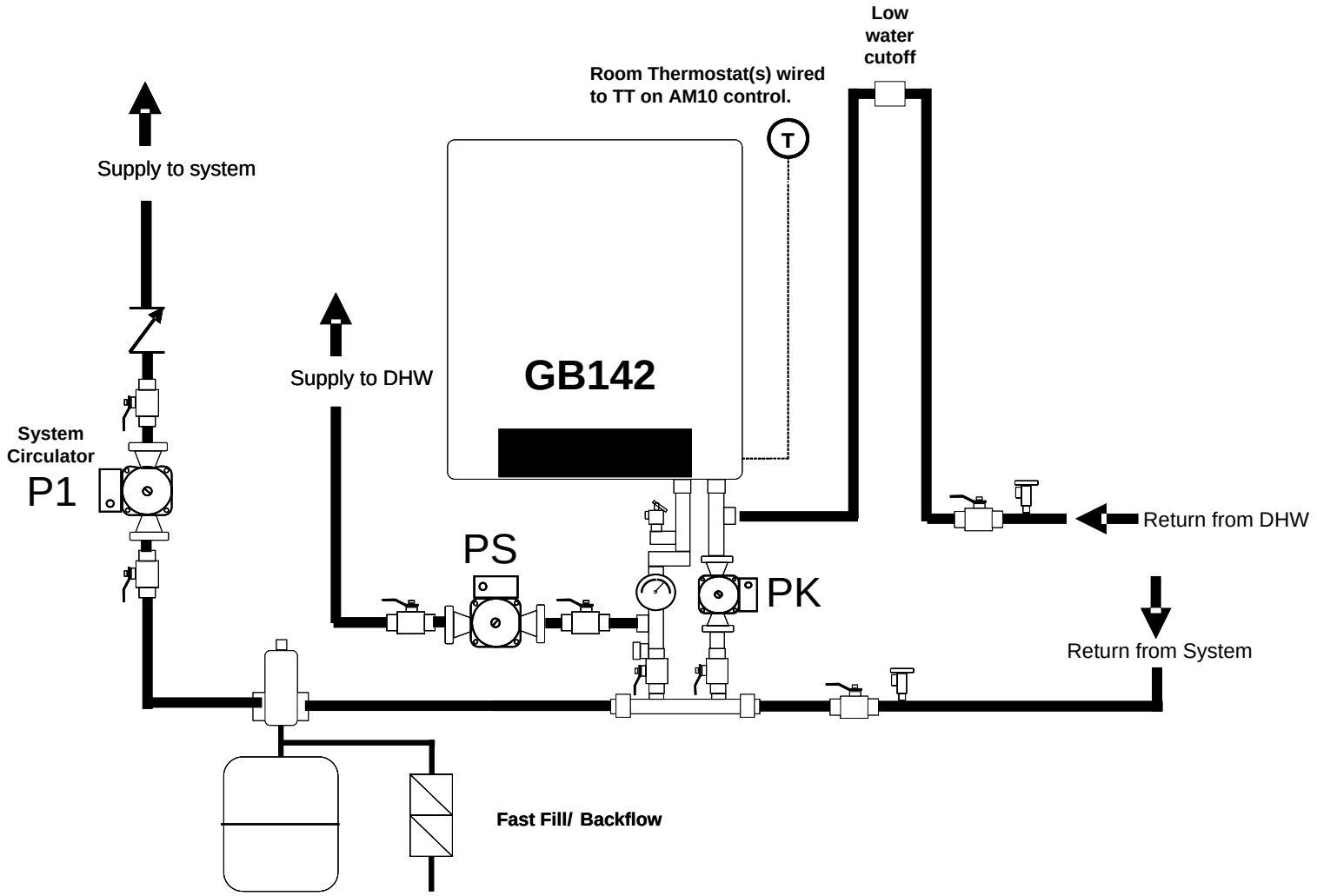
Single Zone with Domestic Hot Water



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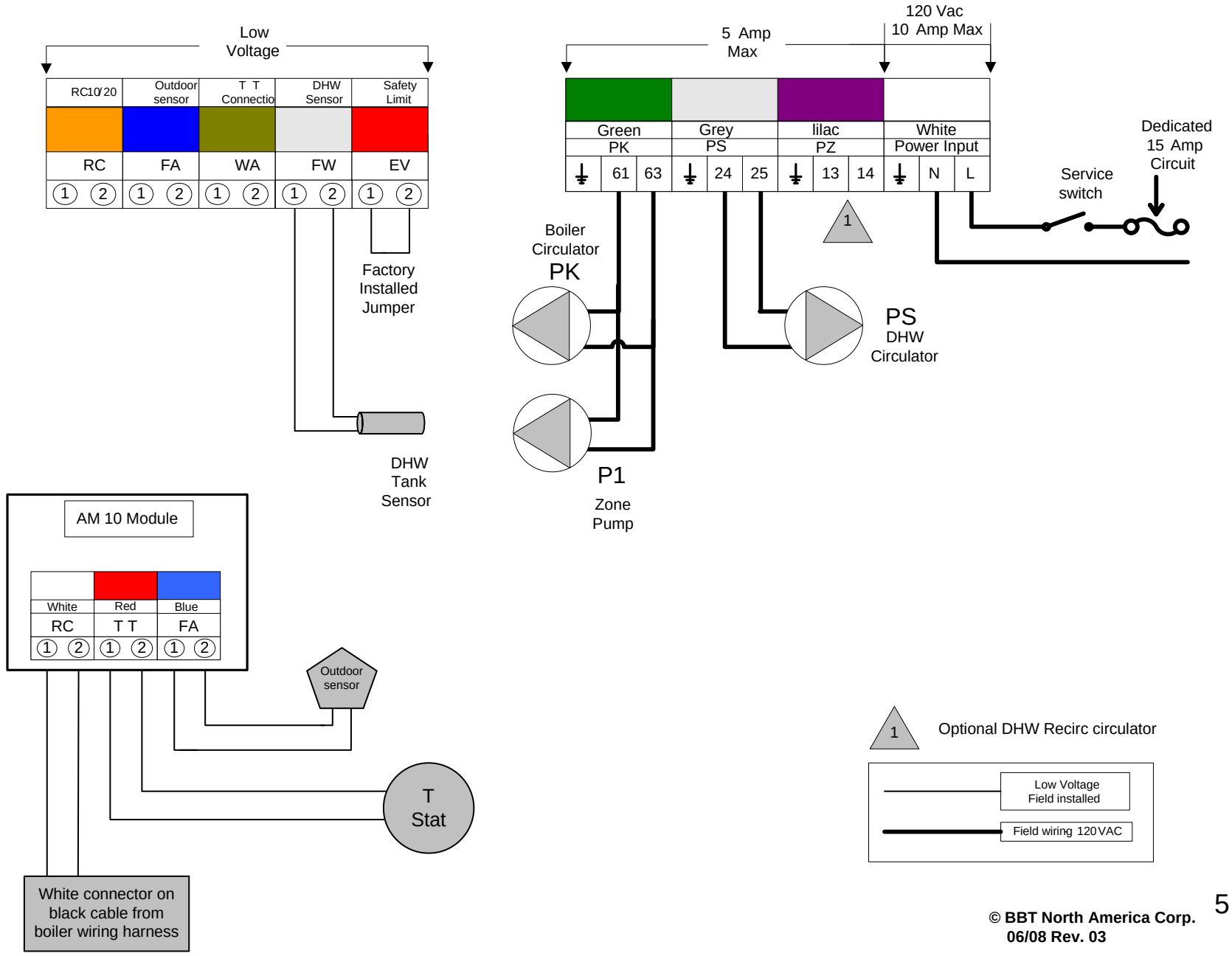
Single Zone with Domestic Hot Water



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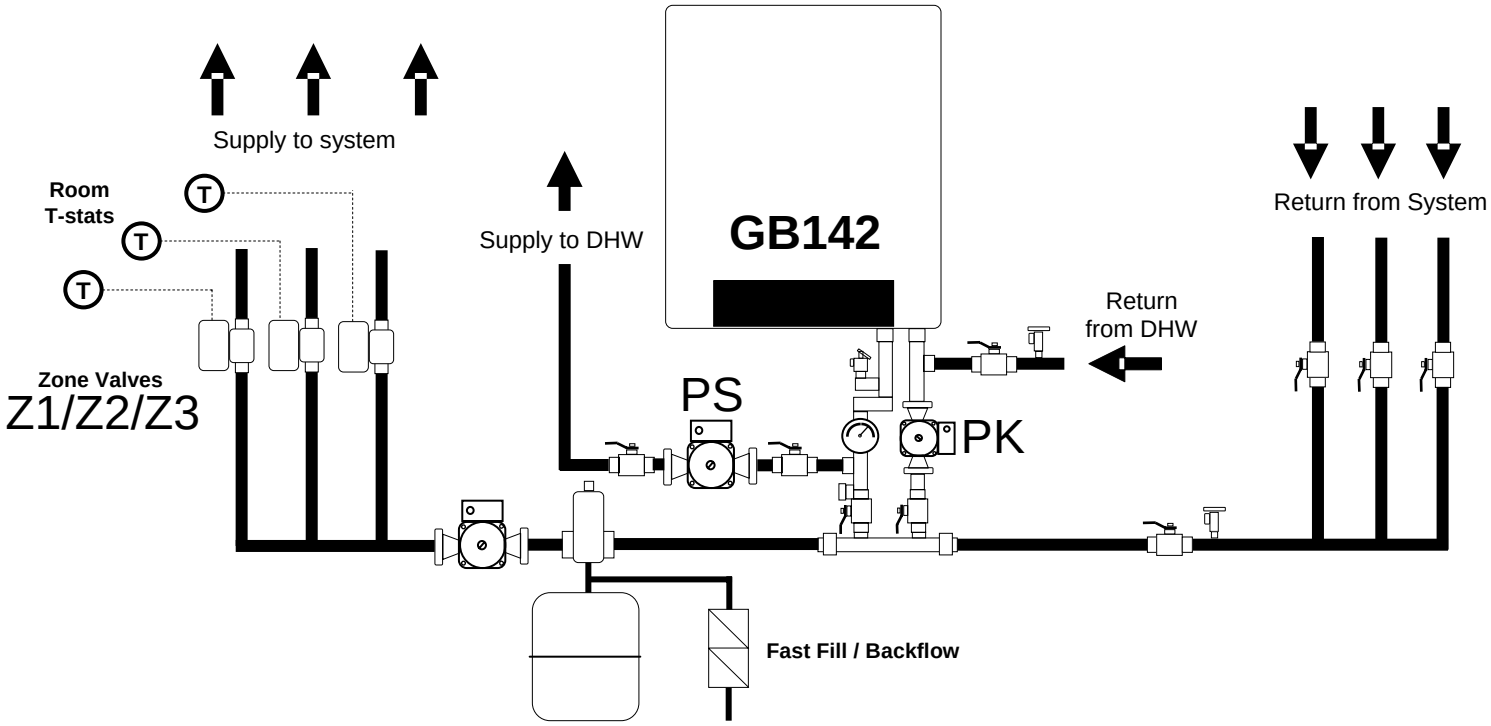
Zone Valves & Domestic Hot Water



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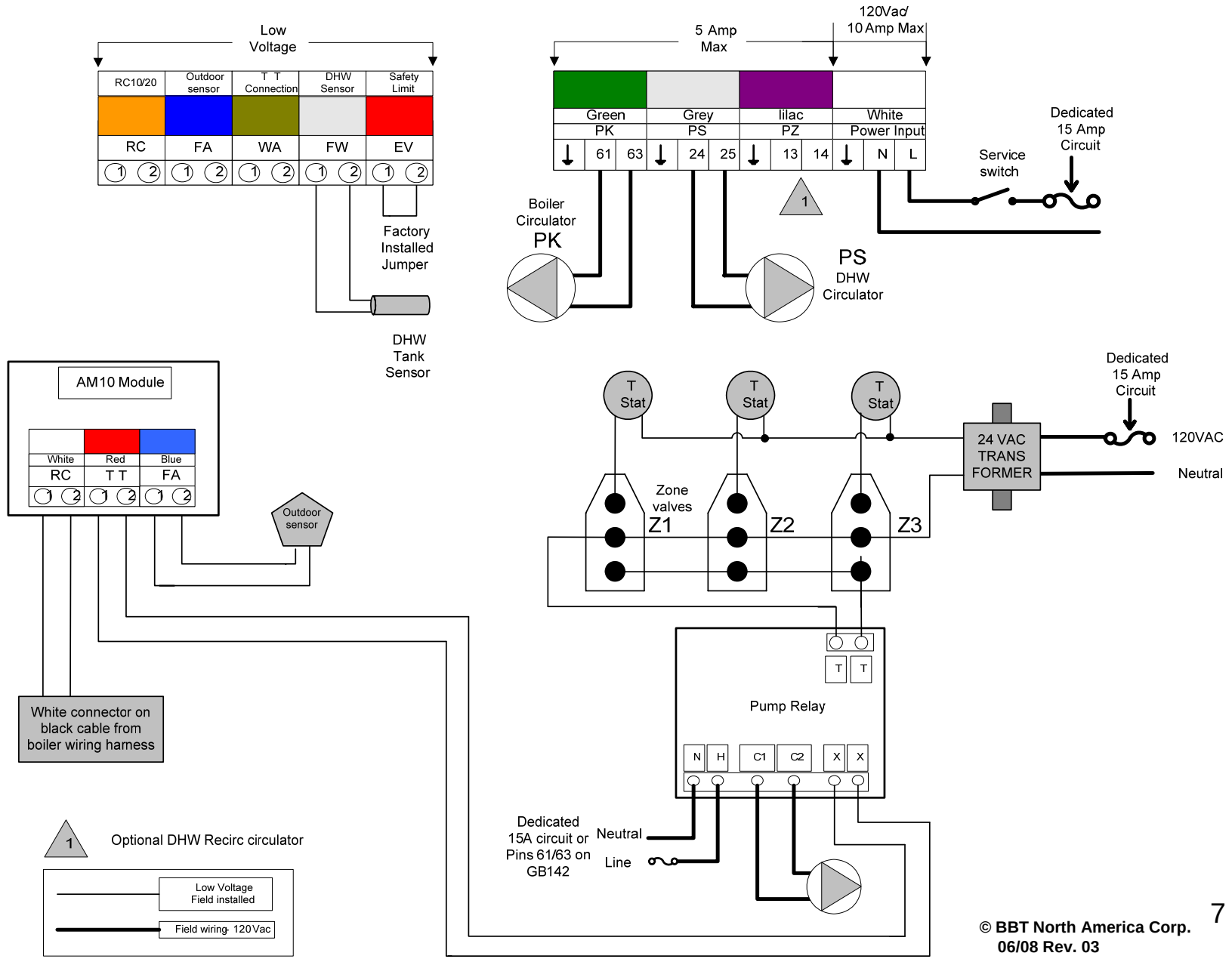
Zone Valves & Domestic Hot Water



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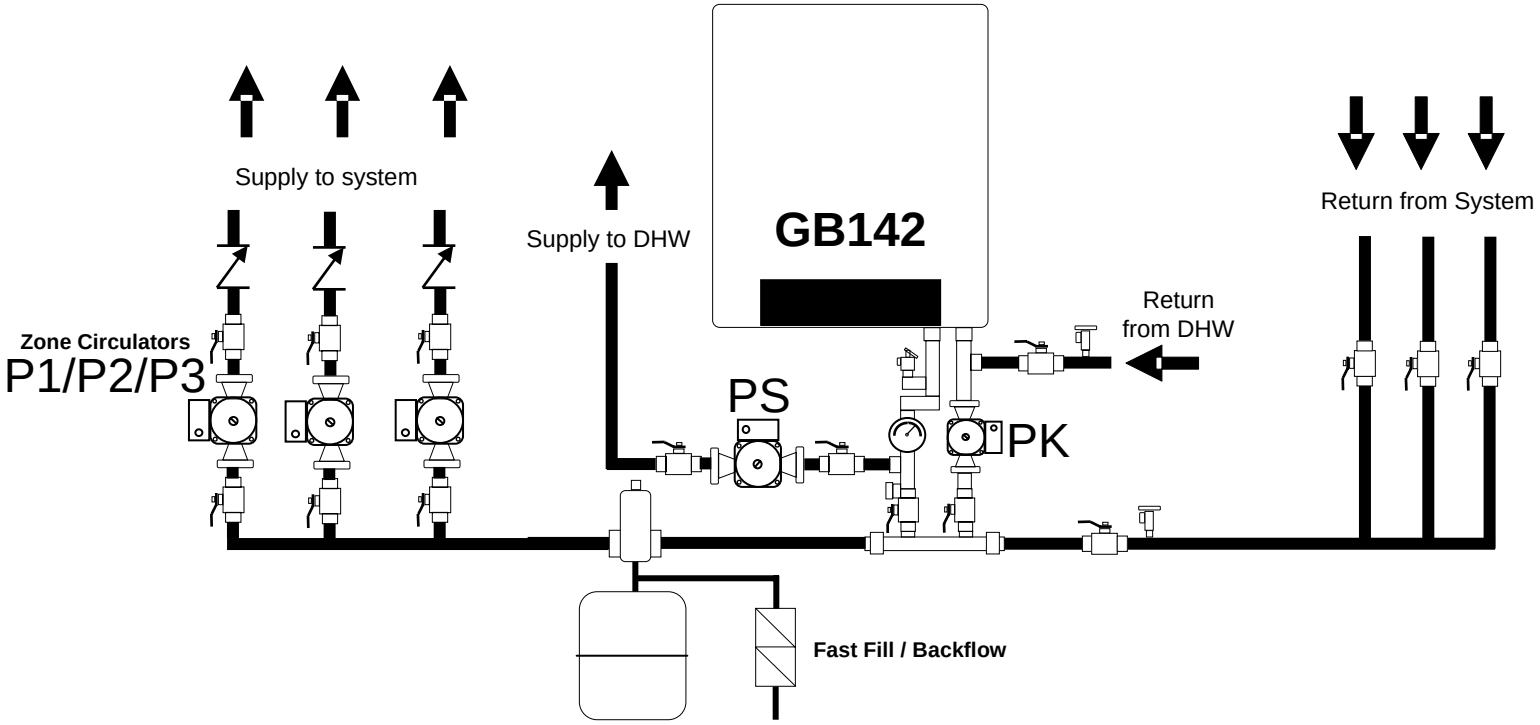
Multiple Zones with Pumps & Domestic Hot Water



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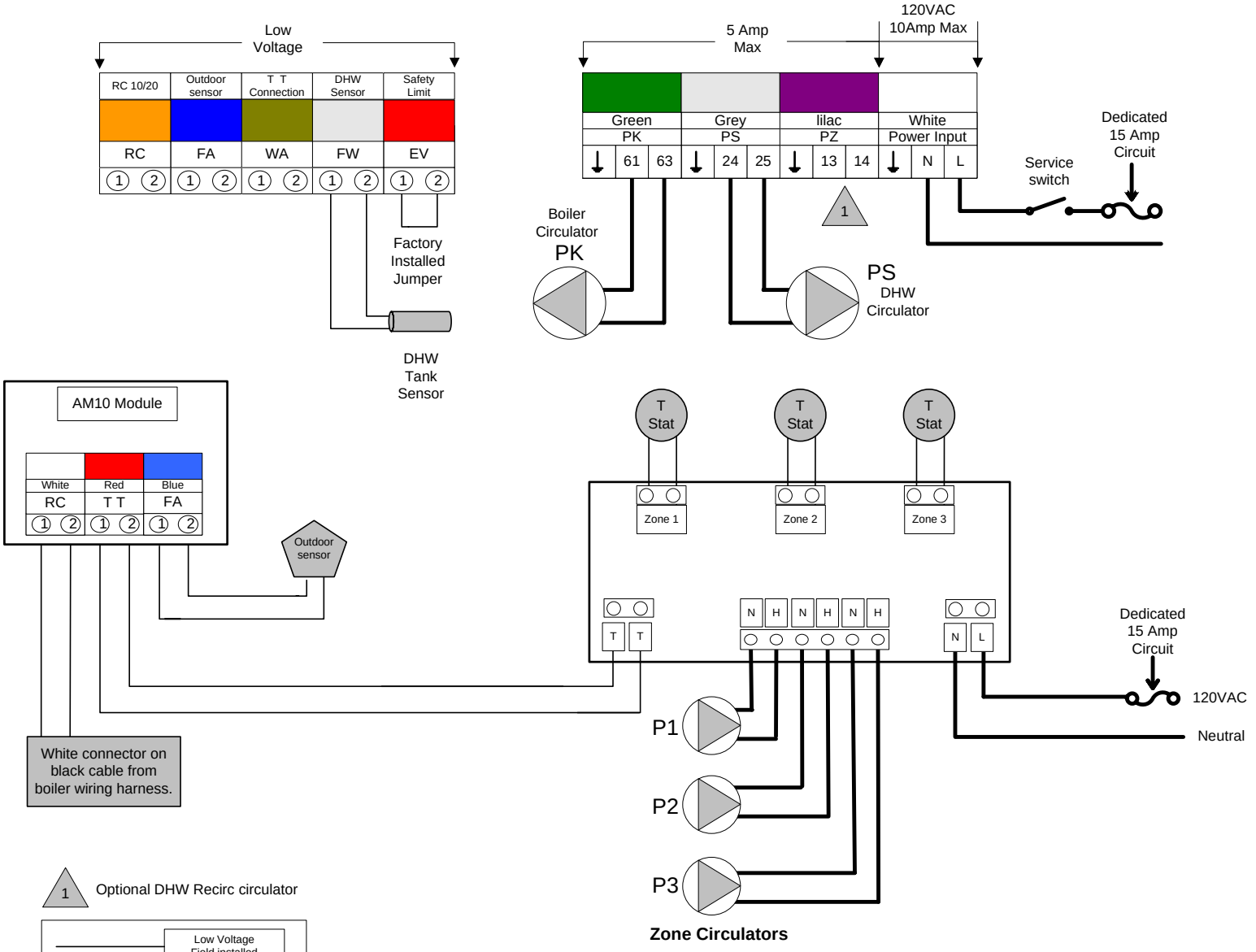
Multiple Zones with Pumps & Domestic Hot Water



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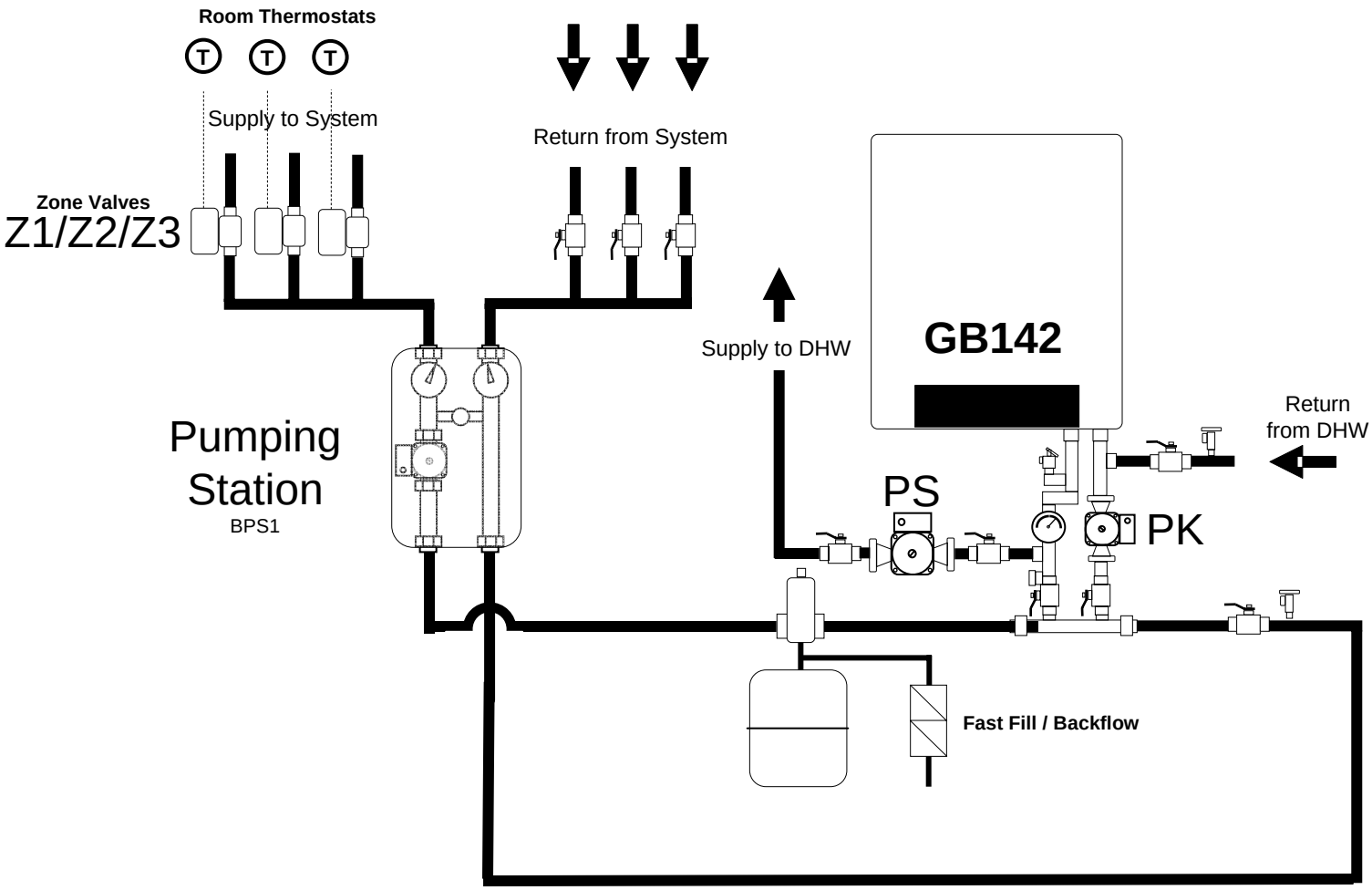
Pumping Station with Zone Valves & Domestic Hot Water



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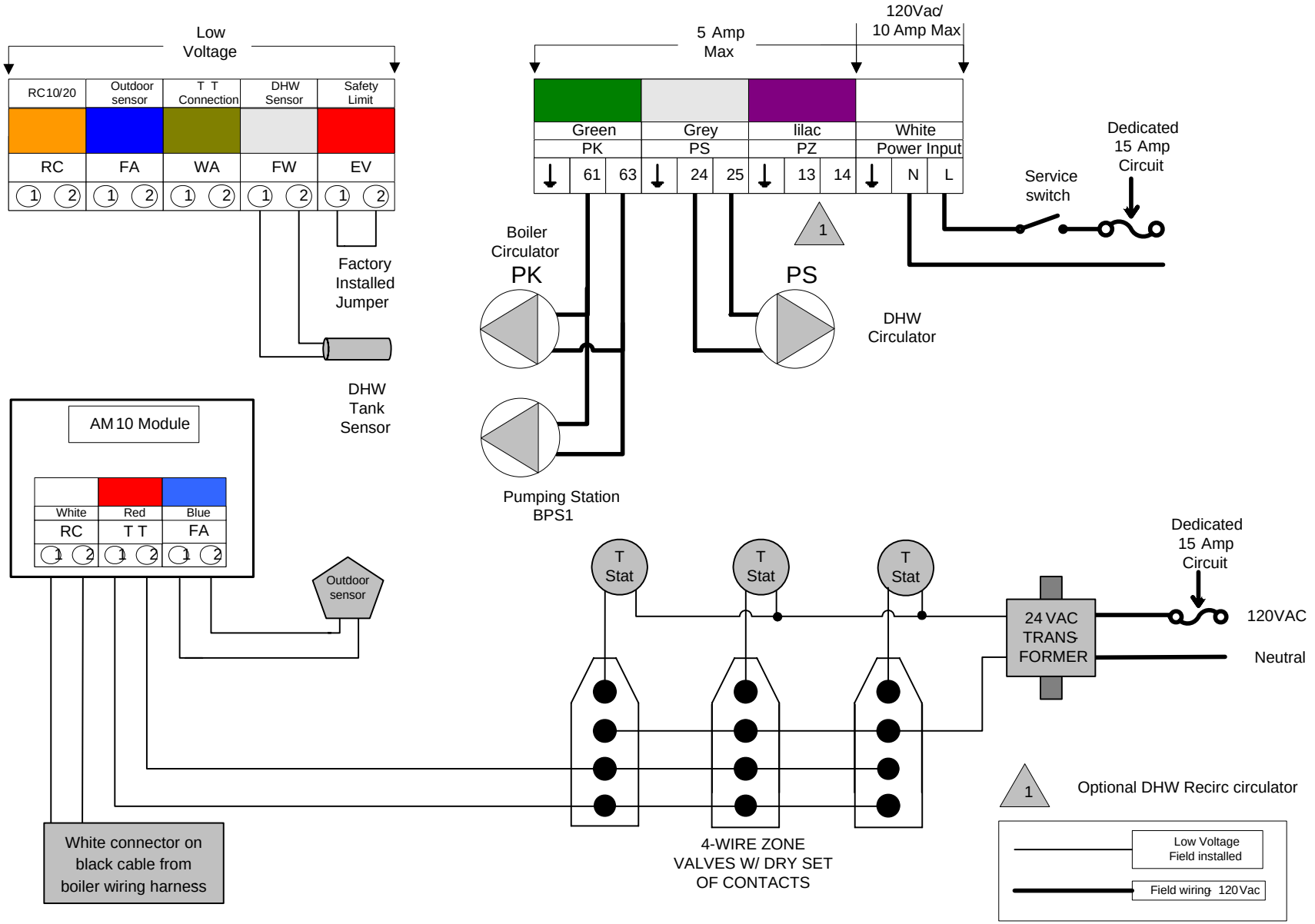
Pumping Station with Zone Valves & Domestic Hot Water



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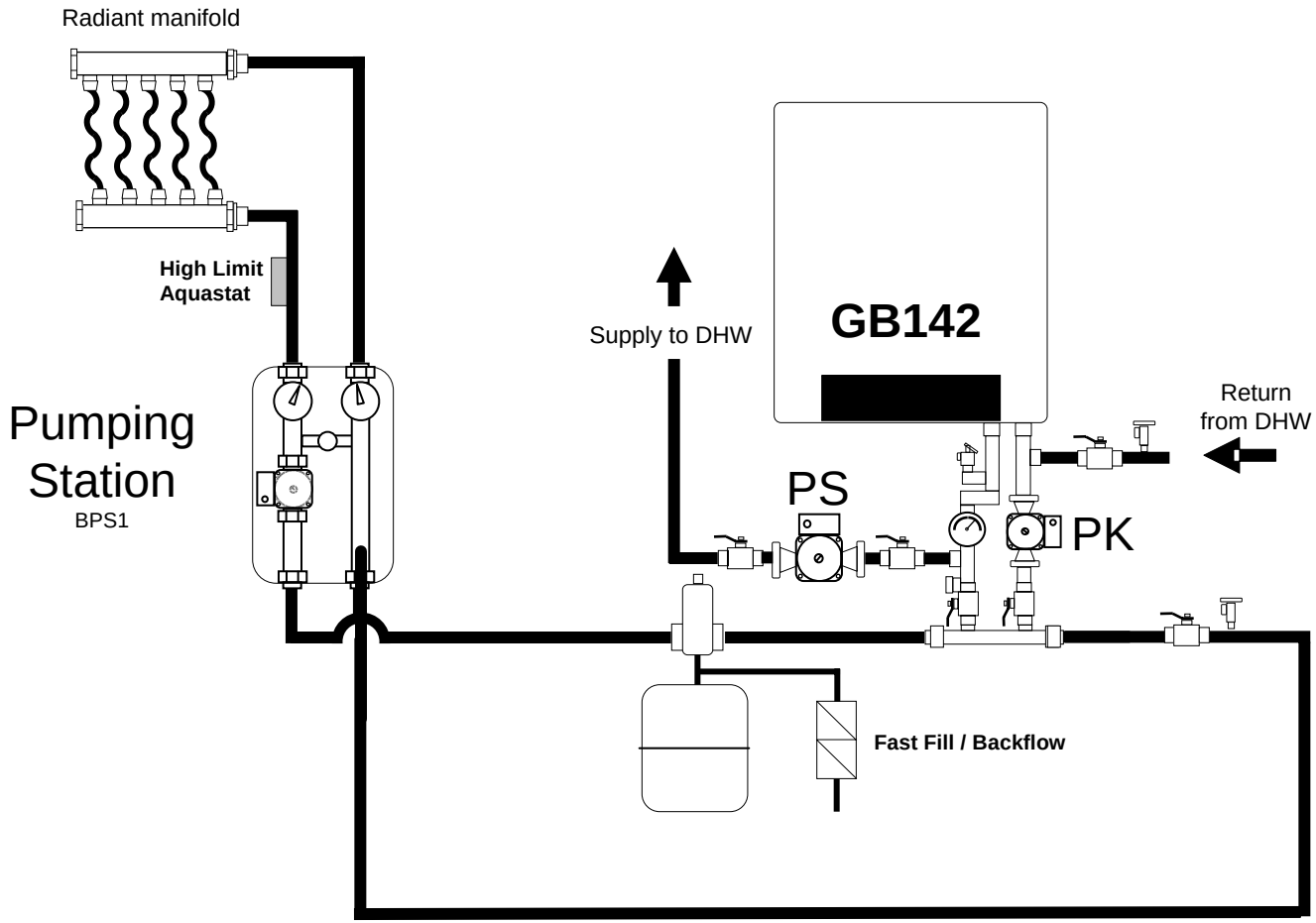
Single Temperature Radiant (no high temp zones) & Domestic Hot Water



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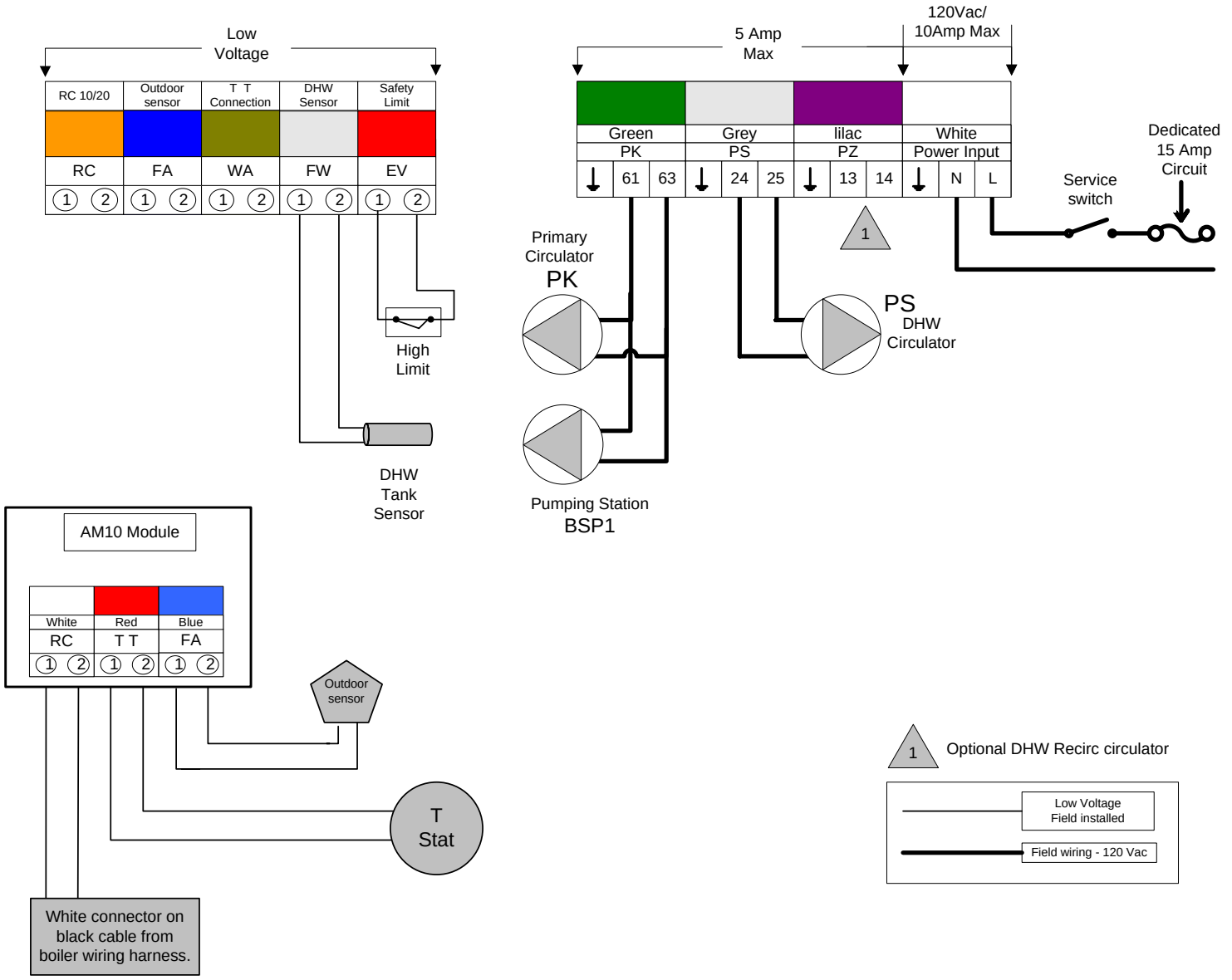
Single Temperature Radiant (no high temp zones) & Domestic Hot Water



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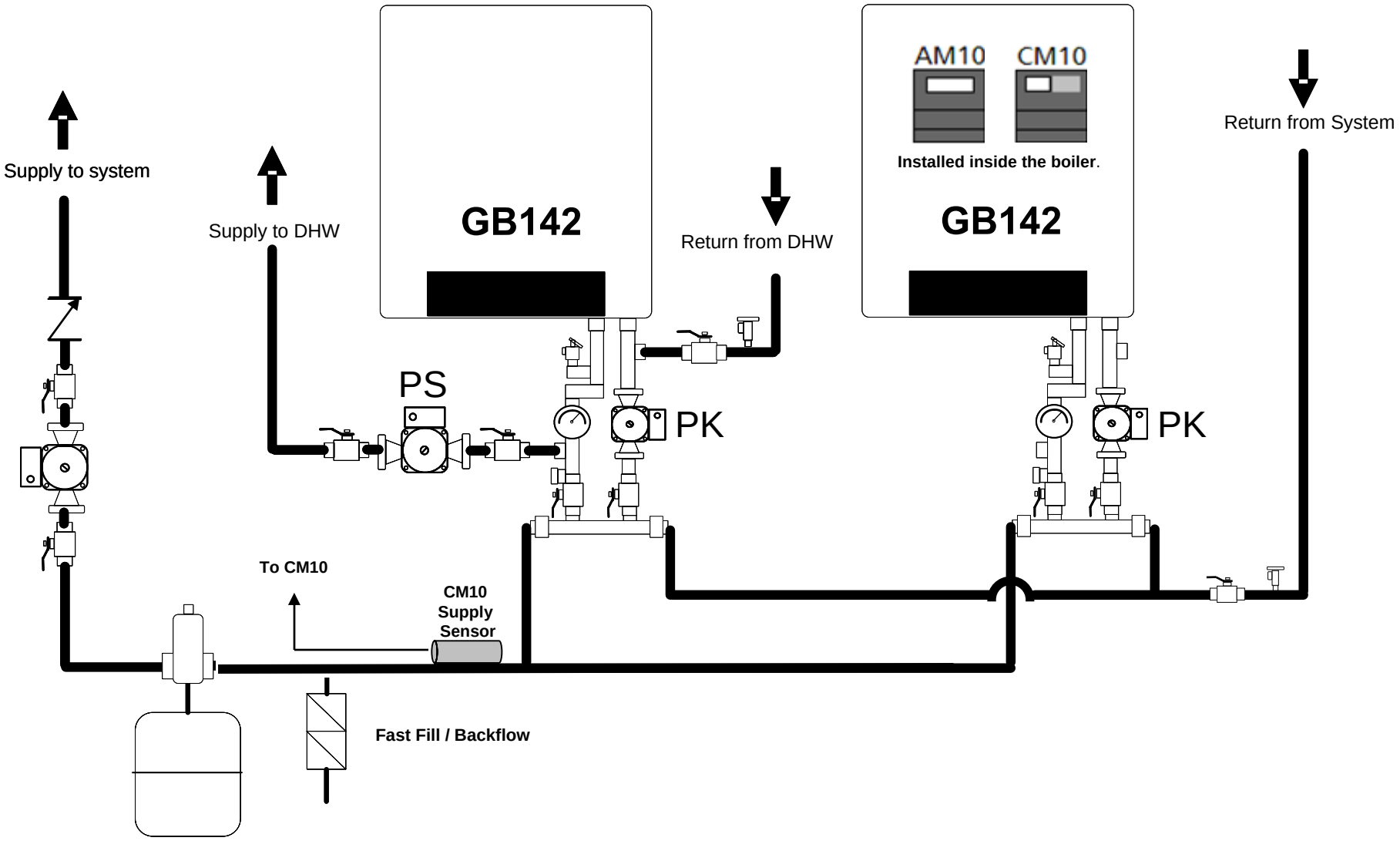
AM10 control of 2 boilers



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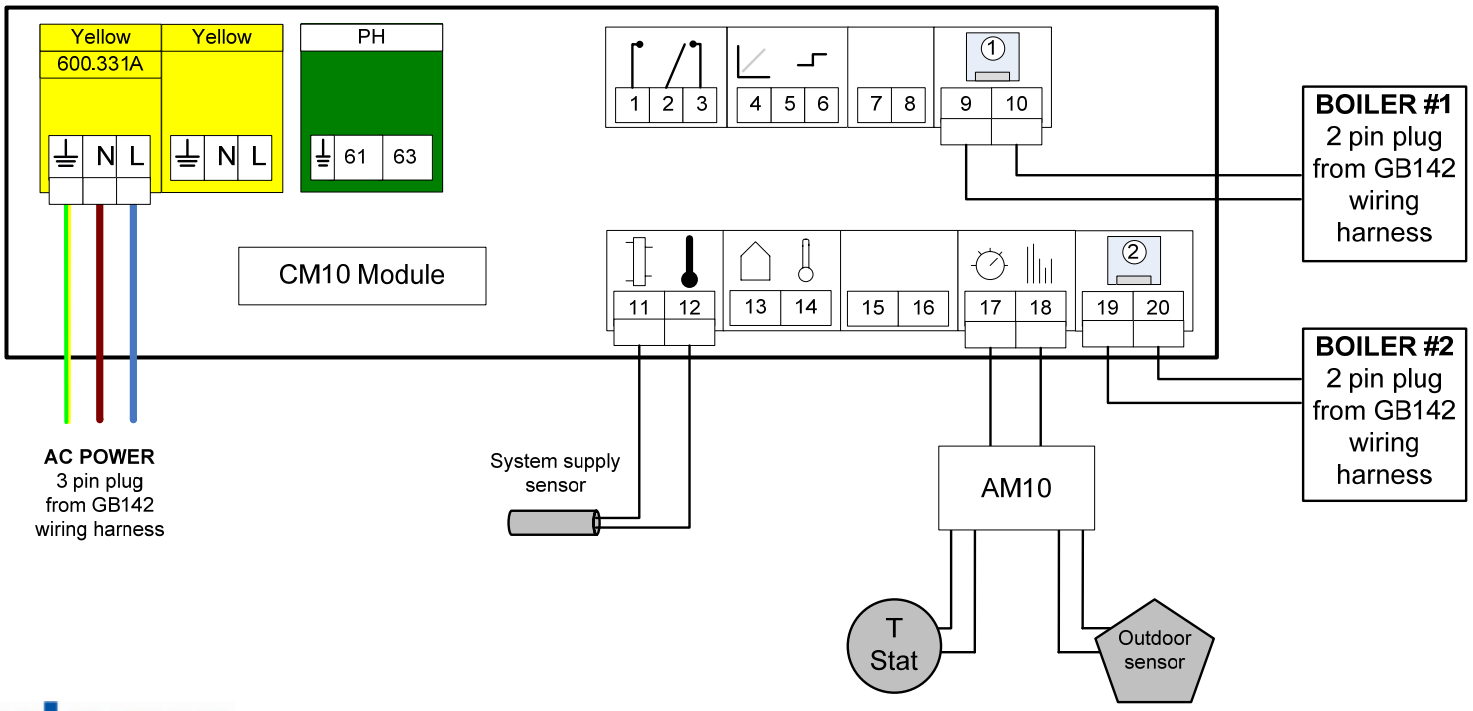
AM10 control of 2 boilers

To run two boilers with outdoor reset, combine one AM10 with a CM10 cascade module. Both modules are installed inside one of the boilers. They utilize cables that are already part of the wiring harness of the boilers.

The CM10 determines if one or both boilers need to fire and at what modulation. The CM10 also rotates the boilers for equal run time.

Pipe the boilers in Reverse-Return as shown on page 14.

For details on the CM10 module, consult the CM10 manual.



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